

**CONVENTION ON  
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ENGLISH ONLY

**JAKARTA MANDATE ON MARINE AND  
COASTAL BIOLOGICAL DIVERSITY**First Meeting of Experts  
Jakarta, Indonesia  
7 - 10 March 1997**REPORT OF THE FIRST MEETING OF EXPERTS ON  
MARINE AND COASTAL BIOLOGICAL DIVERSITY**

1. In accordance with decision II/10 of the Conference of the Parties, the First Meeting of Experts on Marine and Coastal Biological Diversity, hosted by the Government of Indonesia, was held from 7 to 10 March 1997. From 7 to 9 March 1997 the meeting was held on board the Awani Dream II, sailing from Tanjung Priok to Bandar Lampung and return, and on 9 and 10 March 1997 at the President Hotel, Jakarta.
2. Fifteen experts, drawn from the roster of names submitted by countries, on the basis of relevant expertise and with due regard to regional representation, were invited to take part in the Meeting. The experts selected were nominated to the roster by: Australia, Barbados, Croatia, European Community, Japan, Latvia, Marshall Islands, Mexico, the Netherlands, Nigeria, Republic of Korea, Russian Federation, Senegal, South Africa, and Uruguay. Fourteen experts were present at the meeting. An expert nominated by the Government of Indonesia participated *ex-officio*. The Chairman and the Chairman-elect of the Subsidiary Body on Scientific, Technical and Technological Advice were present. Representatives of six international agencies (Food and Agriculture Organization of the United Nations, International Development Research Centre, Intergovernmental Oceanographic Commission, United Nations Scientific, Educational and Cultural Organization, United Nations Environment Programme, and World Bank) also participated in the Meeting. A full list of participants is attached as Annex I.

**AGENDA ITEM 1: OPENING OF THE MEETING**

3. The Meeting was opened at 8:30 pm on 7 March 1997 by the representative of the Secretariat, Mr. Anthony Gross, Officer-in-Charge, Division of Implementation and Communication who welcomed the participants in the name of the Executive Secretary, Mr. Calestous Juma. In his welcoming address, read to the

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meeting, the Executive Secretary regretted being unable to be present and expressed his thanks to the Government of Indonesia for its offer to host the Meeting and for its continued efforts to promote the Jakarta Mandate in international fora. He noted that the programme of work to be developed under the Jakarta Mandate would constitute a new international partnership involving Parties to the Convention and international and regional bodies responsible for legal instruments, agreements and programmes addressing marine and coastal biodiversity issues. The Executive Secretary recalled the importance of the First Meeting of Experts in the elaboration of the three-year work-plan on marine and coastal biological diversity to be considered by the Subsidiary Body on Scientific, Technical and Technological Advice at its next meeting in September 1997, which will in turn provide advice to the fourth meeting of the Conference of the Parties in May 1998.

4. In his message, the Executive Secretary noted that the selection of experts had followed the guidance given by the Conference of the Parties in paragraphs 8(c) and 8(d) of decision II/10. Countries had provided the Secretariat with the names of over seven hundred experts for the roster and the Secretariat was fortunate in having such a wealth of expertise upon which to draw. He welcomed the participation in the Meeting of Mr. Peter Johan Schei and Mr. A.H. Zakri, respectively Chairman and Chairman-elect of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), and of the representatives of international organizations present, expressing his wish that their organizations would continue to work with the Convention in support of its objectives in respect of marine and coastal biological diversity. After thanking those Governments and organizations that had provided background documents for the Meeting, the Government of the Netherlands for the secondment of an expert to assist the Secretariat, the Chairman and Bureau of the SBSTTA for guidance, and H.E. Sarwono Kusumaatmadja, Minister for the Environment, Indonesia for hosting the Meeting, the Executive Secretary wished the participants a successful meeting.

5. Mr. Aca Sugandhy, Assistant Minister of the Environment then welcomed participants on behalf of the Government of Indonesia. The Assistant Minister outlined the arrangements for the Meeting and expressed the satisfaction of his Government at the acceptance by the Conference of the Parties of Indonesia's offer to host the First Meeting of Experts. Recalling the importance of the Jakarta Mandate, adopted by the second meeting of the Conference of the Parties, he welcomed the inclusion of an expert from Indonesia as an *ex-officio* member of the Meeting and noted that Indonesia would like to submit, through its expert, its national views on the programme of work to be elaborated.

6. H.E. Sarwono Kusumaatmadja, State Minister for the Environment, Republic of Indonesia then addressed the Meeting. Recalling the provisions of the Jakarta Mandate and of Agenda 21 he noted that the integrity and quality of the environment constituted a long-term national development objective, and should always be taken into account for the achievement of economic growth, stability and equity. He noted that the natural resources and ecosystems owned by the people of Indonesia, whether terrestrial, coastal and marine waters or atmospheric, need to be well-managed and to be utilized in an integrated and sustainable way in order to maintain environmental quality and to provide maximum benefit to national development.

7. The Minister noted the activities in the field of conservation and sustainable development of marine and coastal biodiversity undertaken by the Government of Indonesia. He referred to the publication of the Indonesian Country Study on Integrated Coastal and Marine Biodiversity Management, the result of joint cooperation between the Ministry of the Environment and the Directorate for Nature Management of the Kingdom of Norway. He noted that the Country Study would form the basis for coastal and marine management by the Government, the private sector and NGOs. Noting the increasing problems raised by marine pollution and degradation of the marine environment, the Minister recalled that the Coastal and Marine Environmental Management Project, elaborated in 1995 with the assistance of the Asian Development Bank, had concluded that

Indonesia needed to manage twenty-two sensitive marine and coastal areas in order to maintain the sustainability of its waters. The size and ecological complexity of its national waters, associated with problems arising from population growth and economic activities, had led to integrated coastal zone management becoming an important issue for Indonesia. In this respect a National Maritime Council, headed by the President of the Republic, had been created in 1996.

8. Expressing his satisfaction that the First Meeting of Experts on Marine and Coastal Biological Diversity was being held in Indonesia, and his appreciation of the close cooperation between the Government of Indonesia and the Secretariat of the Convention in the organization of the Meeting, the Minister welcomed participants and declared the meeting open.

#### **AGENDA ITEM 2: ELECTION OF THE CHAIRPERSON/FACILITATOR**

9. Noting the need to elect a Chairperson/Facilitator familiar with the development of the work on marine and coastal biological diversity under the Convention from the first meeting of the SBSTTA onwards, the expert from Indonesia nominated Dr. Peter Bridgewater (Australia) as Chairperson/Facilitator. The Meeting endorsed this nomination by acclamation. Thanking the Meeting for the trust placed in him, Dr. Bridgewater stated that his role would be that of a facilitator assisting the Meeting to arrive at a successful conclusion.

#### **AGENDA ITEM 3: ADOPTION OF THE AGENDA**

10. The provisional agenda as contained in document UNEP/CBD/JM/Expert/I/1 was adopted. The provisional organization of work, contained in document UNEP/CBD/JM/Expert/I/1/Add.2, was also adopted on the understanding that revisions to the proposed timing and sequence might be made as required. The agenda is attached as Annex II and the list of documents for the Meeting is attached as Annex III.

#### **AGENDA ITEM 4: INTRODUCTION TO THE JAKARTA MANDATE ON CONSERVATION AND SUSTAINABLE USE OF MARINE AND COASTAL BIOLOGICAL DIVERSITY**

11. A representative of the Secretariat introduced document UNEP/CBD/JM/Expert/I/2 prepared for the purpose of facilitating the Meeting. The document recalls the recommendations and decision which constitute the Jakarta Mandate, and restates the guidance provided to the Executive Secretary and the terms of reference of the Meeting as formulated by the Conference of the Parties.

#### **AGENDA ITEM 5: PRELIMINARY EXCHANGE OF VIEWS**

12. The Chairperson/Facilitator and the other participants introduced themselves, summarized their areas of expertise and gave preliminary views on the priorities to be addressed by the Meeting. A summary of the experts' backgrounds and their areas of expertise is attached as Annex IV.

#### **AGENDA ITEM 6: PROPOSED MECHANISM OF WORK**

13. At the second session of the Meeting on 8 March 1997, a representative of the Secretariat introduced document UNEP/CBD/JM/Expert/I/3 (Proposed Mechanism of Work on Marine and Coastal Biological Diversity). The Meeting agreed to adopt the four-step approach to its work suggested in the document.

#### **AGENDA ITEM 7: THE FIVE THEMATIC AREAS OF THE JAKARTA MANDATE: IDENTIFYING PRIORITIES**

14. At the second, third and fourth sessions on 8 March 1997, the Meeting considered Agenda Item 7. At the second session a representative of the Secretariat introduced document UNEP/CBD/JM/Expert/I/4 (A synopsis of the five thematic issue-areas). Participants then discussed the first issue-area: integrated marine and coastal area management. In light of the general agreement that integrated marine and coastal area management constituted a conceptual framework encompassing the remaining four issue-areas, the Chairperson/Facilitator suggested, and the Meeting agreed, to consider the issue-areas in reverse order. The order in which the issue-areas were to be considered thus became: (i) alien species, (ii) mariculture, (iii) sustainable use of marine and coastal living resources, (iv) marine and coastal protected areas, and (v) integrated marine and coastal area management.

15. Following the full consideration of the five thematic areas during the second, third and fourth sessions, the Chairperson/Facilitator requested the Secretariat to prepare a summary of the views expressed and priorities identified to serve as the basis for discussions under Agenda Items 9 and 10.

#### **AGENDA ITEM 8: AVAILABILITY OF FINANCIAL RESOURCES FOR THE IMPLEMENTATION OF THE JAKARTA MANDATE**

16. At the fourth session on 8 March 1997, the representative of the World Bank outlined the operations and priorities of the World Bank Group (IBRD, IDA, MIGA, IFC) in respect of financial support to marine and coastal biodiversity issues. He also noted the availability of financial resources through the biodiversity and international waters focal areas of the Global Environment Facility.

#### **AGENDA ITEM 9: ADDRESSING THE IDENTIFIED PRIORITIES**

17. At its fifth and sixth sessions on 9 March 1997, the Meeting considered a summary of views and priorities prepared by the Secretariat on the basis of the previous day's discussions. This summary, as subsequently amended by the Meeting, is attached as Annex VI.

#### **AGENDA ITEM 10: WORK PLAN FOR THE IMPLEMENTATION OF A FRAMEWORK PROGRAMME ON MARINE AND COASTAL BIOLOGICAL DIVERSITY**

18. At its seventh session on 9 March 1997, the Meeting considered a list of elements for a possible work plan identified by the Chairperson/Facilitator and the Secretariat on the basis of the preceding discussions. At its eighth session on 10 March 1997, the Meeting began consideration of recommendations. On the basis of the

discussions that had taken place under Agenda Items 9 and 10, the Secretariat prepared a list of elements for a three-year work-plan. At the suggestion of the Chairperson/Facilitator, three sub-groups were established to consider in further detail these elements and to report back to the Meeting with additional comments and suggestions. These discussions resulted in the provision of an annotated work-plan and recommendations, contained in Annex V.

#### **AGENDA ITEM 11: OTHER MATTERS**

19. No other matters were considered by the Meeting.

#### **AGENDA ITEM 12: FINALIZATION OF THE REPORT AND RECOMMENDATIONS**

20. The Chairperson/Facilitator and the Secretariat, with the assistance of several experts, prepared a draft report on the work of the Meeting, incorporating the views expressed and the recommendations made.

#### **AGENDA ITEM 13: ADOPTION OF THE REPORT**

21. At its ninth session on 10 March 1997, the Meeting considered the draft report. Amendments were considered and agreed. The Secretariat was requested to prepare a revised draft, incorporating these amendments. It was agreed that this revised draft should be distributed to participants by 15 April 1997 and that requests for any further amendments should be communicated to the Secretariat by 30 April 1997.

#### **AGENDA ITEM 14: CLOSURE OF THE MEETING**

22. The Chairperson/Facilitator closed the Meeting at 9:00 pm on 10 March 1997.

**ANNEX I  
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**ANNEX II**  
**AGENDA OF THE MEETING**

1. Opening of the meeting:
  - 1.1. Welcome statement by the representative of the Secretariat
  - 1.2. Welcome statement by the government representative
  - 1.3. Opening of the Meeting by H.E. Sarwono Kusumaatmadja, Minister of State for Environment
2. Election of the Chairperson/Facilitator
3. Adoption of the agenda
4. Introduction to the Jakarta Mandate on Conservation and Sustainable Use of Marine and Coastal Biological Diversity
5. Preliminary exchange of views
6. Proposed mechanism of work on marine and coastal biological diversity
7. The five thematic areas of the Jakarta Mandate: Identifying priorities
8. Availability of financial resources for the implementation of the Jakarta Mandate
9. Addressing the identified priorities
10. Work plan for the implementation of framework programme on marine and coastal biological diversity
11. Other matters
12. Finalization of the report and recommendations
13. Adoption of the report
14. Closure of the meeting

### ANNEX III

#### LIST OF DOCUMENTS FOR THE FIRST MEETING OF EXPERTS ON MARINE AND COASTAL BIOLOGICAL DIVERSITY

Symbol	Title
<u>Working documents</u>	
UNEP/CBD/JM/Expert/1/1	Provisional agenda
UNEP/CBD/JM/Expert/1/Add.1	Annotated provisional agenda
UNEP/CBD/JM/Expert/1/Add.2	Provisional organization of work
UNEP/CBD/JM/Expert/1/2	Introduction to the Jakarta Mandate on Marine and Coastal Biodiversity including terms of reference of the Meeting of Experts on marine and coastal biodiversity
UNEP/CBD/JM/Expert/1/3	Proposed Mechanism of Work on Marine and Coastal Biological Diversity
UNEP/CBD/JM/Expert/1/4	A synopsis of the five thematic issue-areas

#### Information documents

UNEP/CBD/JM/Expert/1/Inf.1	Provisional list of participants
UNEP/CBD/JM/Expert/1/Inf.2	Report of the First Meeting of the Subsidiary Body on the Scientific, Technical and Technological Advice [ <i>doc. UNEP/CBD/COP/2/5</i> ]
UNEP/CBD/JM/Expert/1/Inf.3	Report of the Second Meeting of the Conference of the Parties to the Convention on Biological Diversity [ <i>doc. UNEP/CBD/COP/2/19</i> ]
UNEP/CBD/JM/Expert/1/Inf.4	Report of the Second Meeting of the Subsidiary Body on the Scientific, Technical and Technological Advice [ <i>doc. UNEP/CBD/COP/3/3</i> ]
UNEP/CBD/JM/Expert/1/Inf.5	Report by the Executive Secretary on Marine and Coastal Biological Diversity [ <i>doc. UNEP/CBD/SBSTTA/2/14</i> ]
UNEP/CBD/JM/Expert/1/Inf.6	Options for Interpreting and Operationalizing the Concept of Integrated Coastal Area Management within the Context of the Implementation of the Jakarta Mandate

#### Other documents for distribution:

##### Documents of the Convention

1. *Convention on Biological Diversity* (text and annexes)
2. *A Call to Action: Decisions and Ministerial Statement from the Second Meeting of the Conference of the Parties to the Convention on Biological Diversity*
3. Status of ratification (as at 18 February 1997)
4. List of countries having submitted the names to the roster of experts on marine and coastal biological diversity (as at 13 January 1997)

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Background documents received for distribution

1. Cesar, H. (1996) *The Economic Value of Indonesian Coral Reefs*. Washington DC, World Bank, Agriculture Operations Division
2. Cohen, S. and Steen, K *Addressing Marine and Coastal Biodiversity Loss Under the Convention on Biological Diversity: A User-friendly Guide to the "Jakarta Mandate on Marine and Coastal Biodiversity"* Washington DC, Biodiversity Action Network (BIONET) and IUCN (October 1996 draft)
3. de Fontaubert, A. C., Downes, D. R., and Agardy, T. S. (1996) *Biodiversity in the Seas, Implementation of the Convention on Biological Diversity in Marine and Coastal Habitats* IUCN Gland and Cambridge, in collaboration with Center for International Environmental Law, Washington DC and, World Wildlife Fund, Washington DC
4. Freestone, D. (1995). "The Conservation of Marine Ecosystems under International Law" in Redgwell, C. and Bowman, W. (eds) *International Law and the Conservation of Biological Diversity* London, Kluwer Law International, pp.97-107
5. McAllister, D E. *Status of the World Ocean and its Biodiversity*, Sea Wind 9(4), Ocean Voice International, Ottawa, October-December 1995
6. World Conservation Monitoring Centre. 1996. *The Diversity of the Seas: a regional approach*, World Conservation Press, Cambridge UK

Submissions received

1. *A View from Bioforum for Experts Meeting on Jakarta Mandate* Jakarta, Bioforum
2. *Aquatic Biodiversity and Local & Indigenous Communities* (Contribution from the Shuswap Nation Fisheries Commission, Canada)
3. *Experience of the United Kingdom in Relation to Obtaining and Using Coastal and Marine Biodiversity Information including in Relation to Coastal Zone Management, and in Relation to Alien Marine Species* (Contribution from the UK Government's statutory advisors, Joint Nature Conservation Committee)
4. *Indonesian Marine and Coastal Biological Diversity: A Country Report* (Indonesian Academy of Sciences)
5. *Marine and Coastal Biodiversity: ICLARMS's Perspectives* (A paper submitted by the International Center for Living Aquatic Resources Management)
6. *Preliminary Report of the Southeast Asia Regional Workshop on Marine Biodiversity and the Convention on Biological Diversity (Subic Bay, Philippines, 24-25 October 1996)* (Prepared by the Government of the Philippines and the World Resources Institute)
7. *The Jakarta Mandate and the World Bank*
8. *The Role of the Regional Seas Actions Plans, Conventions and Associated Protocols as Mechanisms in Support of the Implementation of the Convention on Biological Diversity at the Regional Level* (United Nations Environment Programme)

Other documents available at the meeting

1. Doyle, John J. and Persley, Gabrielle J. (eds) (1996) *Enabling the Safe Use of Biotechnology: Principles and Practice* Washington DC, The World Bank, Environmentally Sustainable Development Studies and Monographs Series No.10
2. Durinck, J., Skov, H., Jensen F.P. and Phil. S. (1994) *Important Marine Areas for Wintering Birds in the Baltic Sea: Report to the European Commission (DG XI)* Copenhagen, Ornis Consult Ltd. and National Environmental Research Institute

3. ETI Biodiversity Centre(1996) “The new Linnaeus II version 2.0” *ETI Partners Newsletter* UNESCO, vol.3, no.2
4. FAO (1995) *Precautionary Approach to Fisheries, part 1: Guidelines on the precautionary approach to capture fisheries and species introductions* Rome, Food and Agriculture Organization, Fisheries Technical Paper 350/1
5. HELCOM (1996) *Coastal and Marine Protected Areas in the Baltic Sea Region* Balt.Sea.Enviro.n.Proc. no. 63
6. HELCOM (1996) *Third Periodic Assessment of the State of the Marine Environment of the Baltic Sea, 1989-1993: executive summary* Balt.Sea.Enviro.n.Proc. no. 64A
7. HELCOM (n/d) *The Baltic Sea Environment: reports*
8. Hooten, A.J. and Hatzios, M.E. (eds) (1995) *Sustainable Financing Mechanisms for Coral Reef Conservation* Washington DC, The World Bank, Environmentally Sustainable Development Proceedings Series, no. 9
9. Indonesia, Government of (1996) *Indonesian Country Study on Integrated Coastal and Marine Biodiversity Management* Jakarta, Ministry of State for Environment of the Republic of Indonesia in cooperation with the Directorate for Nature Management of the Kingdom of Norway
10. Kelleher, G., Bleakley, C. and Wells, S. (eds) (1995) *A Global Representative System of Marine Protected Areas: volumes I to IV* Washington DC, Great Barrier Reef Marine Park Authority, The World Bank and The World Conservation Union
11. Linden, O. and Lundin, C.G. (eds ) (1995) *Integrated Coastal Zone Management in Tanzania* Stockholm, SIDA, The World Bank and the Government of Tanzania
12. Lundin, C.G. and Linden, O. (1995) *Integrated Coastal Zone Management in the Seychelles* Stockholm, SIDA, The World Bank and the Government of the Seychelles
13. Lundin, C.G. and Zilinskas, R.A. (1995) *Marine Biotechnology in the Asian Pacific Region* Stockholm, SIDA and The World Bank
14. UNEP (1996) *Report of the International Coral Reef Initiative (ICRI) Regional Workshop for the East Asian Seas* Bangkok, United Nations Environment Programme (UNEP(W)/EAS WG.3/2)
15. UNEP (1996) *East Asian Seas Regional Report on the Issues and Activities Associated with Coral Reefs and related Ecosystems* Bangkok, United Nations Environment Programme, RCU/EAS Technical Reports Series No. 11
16. UNEP (1996) *Integrated Coastal Zone Management Training Manual* Bangkok, United Nations Environment Programme, RCU/EAS Technical Reports Series No. 12

## ANNEX IV

## SUMMARY OF EXPERTS' BACKGROUNDS AND AREAS OF EXPERTISE

Region	Country	Name & nationality	Background/ <i>Specialization</i>	Remarks
Africa	Nigeria	Dr. (Mrs.) Tonie Victoria Imade <b>Akpata</b> Nigerian (Female)	Biology; <i>Environmental Microbiology; Water pollution; Environment Impact Assessment</i>	Associate Professor, University of Lagos; author of 20 relevant publications; member of national UNESCO/MAB Committee; Council of Ecological Society; first inter-ministerial committee on water hyacinth invasion
	Senegal	Prof. Dr. E. Salif <b>Diop</b> Senegalese (Male)	Physical Geography; Geomorphology; <i>Cartography/ Remote Sensing</i>	Professor, Department of Geography, University CAD de Dakar; author-editor of 29 publications on remote sensing, mangrove ecosystem; participant UNESCO, IGBP, LOICZ activities
	South Africa	Dr. Denzil G.M. <b>Miller</b> South African (Male)	Marine biology; <i>Estimation Antarctic krill yield; krill behaviour; dynamics of Antarctic marine and associated ecosystems</i>	Specialist Scientist, Sea Fisheries Research Institute; national representative, CCAMLR Scientific Committee; member of various relevant working groups; Chairman, Marine Sciences Society
Asia and the Pacific	Indonesia	Dr. M. Kasim <b>Moosa</b> Indonesian (Male)	Marine Biology; <i>Taxonomy; Coral reef; marine biodiversity</i>	Principal research scientist, Centre for Oceanology Research and Development; currently team leader/project manager for Coral Reef Rehabilitation project (COREMAP); member of editorial team on integrated coastal and marine biodiversity management; has participated in various international activities related to marine biodiversity

Asia and the Pacific ( <i>cont.</i> )	Japan	Dr. Makoto <b>Omori</b> Japanese (Male)	Biological Oceanography; Marine Ecology; <i>Planktology</i> ;, <i>Aquaculture</i> <i>and Mariculture</i>	Professor, Tokyo University of Fisheries; Professional experience at both national and international level; more than 90 relevant publications
	Korea, Republic of.	Dr.Chung Il <b>Choi</b> Korean (Male)	Biological Oceanography; <i>Ecology of phytoplankton</i> <i>and particulate of organic</i> <i>matter</i>	Former Secretary General , Korean Biodiversity Council published 3 books and 24 papers on relevant topics; currently president of Korean Society of Limnology; director of Institute of Biological Science and Professor of Earth and Marine Science, Hanyang University
	Marshall Islands	Mr. Riyad <b>Mistry</b> Indian (Male)	Marine Affairs and Ocean Engineering; <i>Coastal</i> <i>resources assessment</i> ; <i>Analysis and formulation of</i> <i>policy</i> ; <i>Community</i> <i>Education</i> ; <i>Tropical</i> <i>ecosystems</i>	Currently Project Manager, RMI Coastal Management Programme (UNDP/MALGOV-EPA); published 7 relevant papers
Central and Eastern Europe	Croatia, Republic of	Dr. Antonieta <b>Pozar-Domac</b> Croatian (Female)	Marine Biology; <i>Marine</i> <i>fauna &amp; flora</i> ; <i>benthic</i> <i>biocenoses of Adriatic Sea</i> ; <i>Organic production</i> ; <i>Ecological process and</i> <i>mathematical models of</i> <i>water ecosystem</i>	Professor of Biological Oceanography and Marine Biology, University of Zagreb; Member, Council for Scientific Exploration of Adriatic Sea-Natural Heritage and Biodiversity Protection
	Latvia	Mr. Andris <b>Andrushaitis</b> Latvian (Male)	Biology/Zoology; Biological Oceanography; <i>Aquatic</i> <i>ecology</i> ;, <i>Planktology</i> ; <i>Marine Protected Areas ( in</i> <i>Baltic)</i>	Director, Institute of Hydroecology, University of Latvia; head of research project; member of ICES; professional experience: ecotoxicology, structure and ecophysiology of microzooplankton; about 30 scientific publications;

Central and Eastern Europe ( <i>cont.</i> )	Russian Federation	Dr. Sergei <b>Nikonorov</b> Russian (Male)	Marine Biology; <i>Neurobiology; Biophysics;</i> <i>Genetic selection in fish</i>	Senior Scientist, Russian Academic of Science and Vice-President, Inter-Department Ichthyological Commission; professional experience in genetics and animal physiology and neurobiology
Latin America and the Caribbean	Barbados	Dr. Wayne <b>Hunte</b> Barbadian (Male)	Biology; <i>Pollution; Coastal Zone Management;</i> <i>Environment Impact Assessment; Fisheries Management</i>	Director of Bellairs Research Institute, Barbados; Professor, University of the West Indies and McGill University; published more than 40 papers in international journals and 50 technical report; consultant for various UN/International agencies, advisor to national agencies
	Mexico	Ms. Raquel Briseno <b>Duenas</b> Mexican (Female)	Biology; <i>Conservation biology/marine turtle ;</i> <i>Coastal Management;</i> <i>Information (Data Base for management of ecology and biology);</i>	Lecturer/Researcher, National University of Mexico/Marine and Freshwater Science Institute; specialist in marine turtles; member of SSC/IUCN/Marine Turtle Specialist Group
	Uruguay	Dr. Victor <b>Scarabino</b> Uruguayan (Male)	Marine Biology; <i>Taxonomy (of marine molluscs)</i>	Currently Consultant, TEMA (training, education and mutual assistance) Capacity Building Unit, IOC; former Director, GEF wetlands biodiversity project in Uruguay; Professor of Oceanography; Head of Department of Fisheries and Oceanography; considerable professional experience in the region

Western European and Other Countries	Australia	Dr. Peter <b>Bridgewater</b> Australian (Male)	Biology; Public Administration <i>Land/Seascape Ecology; Conservation &amp; Management Biodiversity; Conservation &amp; management of mangrove and saltmarsh</i>	Chairman, International Whaling Commission; Chairman, Standing Committee for CMS; Chairman, ICC UNESCO/MAB; Member of Australian delegation to SBSTTA and COP, rapporteur of SBSTTA-1; over 100 publications on conservation biology, landscape ecology and vegetation
	European Commission	Dr. Olle <b>Hagstroem</b> Swedish (Male)	Chemical Oceanography; Zoology; <i>Fisheries</i>	Principle Administrator, Unit for Conservation and Environmental Issues, DG XIV Fisheries; former Deputy Director, Institute of Marine Research, Sweden); 25 years experience in fisheries research and management
	Netherlands	Ms. Carien <b>van Zwol</b> Dutch (Female)	Biology; Public Administration; <i>Marine Pollution; Coastal Zone Management; Fisheries and offshore activities</i>	Currently Project Manager, International Affairs, responsible for international marine environmental issues in particular OSPAR; previous experience with Ecology-Toxicology research, policy and advice;. participated in various activities of OSPAR and ICES Working Groups as well as the Secretariat of the Regional Task Team North Sea; member of Dutch delegation to SBSTTA I.

## ANNEX V

### CONCLUSIONS AND RECOMMENDATIONS

#### I. Implementation of the Marine and Coastal Biodiversity Activities

The Meeting emphasized the important role to be played by various Convention mechanisms in the effective implementation of the provisions of the Convention in relation to marine and coastal biodiversity issues. To a large extent such mechanisms rely on regional, national and local activities as well as the opportunities offered by the Convention structure for the facilitation and coordination of activities.

The Meeting therefore endorsed facilitation by Convention structures of the following:

- (a) the holding of special workshops or consultations by experts on specific issues;
- (b) the formulation of particular scientific, technological and technical tasks and the assignment of tasks to be carried out by experts, or by other identified fora, under the guidance of the Executive Secretary. Such tasks might include, inter-alia:
  - gathering, compilation and synthesis of primary information;
  - review of scientific/technical activities, literature and reports;
  - assessment of data from relevant national, regional and international organizations and/or institutions;
  - compilation and reporting of methodologies to assess the effectiveness of measures to limit biodiversity impacts and to assess the implementation of the Convention;
  - reviewing activities to promote technology transfer and development;
  - attention to be given to the building of expertise and regional empowerment in methods of strategic importance for the assessment of biodiversity impact and the implementation of the Convention;
  - formulation of procedures to assess the relative weighting and monetary value of biodiversity attributes in the evaluation of impact costs (*ie* to internalize externalities along the lines of the current World Bank analysis); and
  - strengthening and promoting the flow of information/data, including electronic conferencing, relevant to implementation of the Convention between Parties and regional organizations concerned with conservation and sustainable use of marine and coastal biodiversity, and between the Secretariat and such organizations.

These considerations indicate that a strategic approach to avoid duplication of efforts and to promote cost effective co-operation will be required. Examples of current initiatives addressing biodiversity-related issues are given in Annex VII. The Meeting recommended that a full review should be carried out of relevant activities in this context. The proposed review would serve to avoid duplication. It should focus on current actions rather than planned actions so as to ensure the best use of available commitments/resources in the planning and implementation of activities under the Convention.

## II. Application of the Precautionary Approach to Biodiversity Impacts

In respect of the Convention, the Meeting agreed that the precautionary approach<sup>1</sup> should take account of uncertainties in knowledge on biodiversity and recognize the need to take action in the face of incomplete knowledge.

The precautionary approach also implies that activities that are likely to impact on biodiversity should be subject to prior review and that some evaluation of the effects of impacts should be undertaken. As far as possible therefore a management plan should be developed with management objectives being clearly specified and guidelines given on how biodiversity impacts are to be assessed, monitored and addressed. Specified interim management measures should apply to all activities likely to impact on biodiversity until such time as a management plan is in place. The standard of proof to be used in decisions regarding these activities should take account of the potential risk to the biodiversity or functions of the system or systems concerned, while also taking into account the expected benefits of the activities.

In connection with the above, the management objectives should consider both the manner in which the benefits from the biodiversity impact activity are to be realized as well as the possible undesirable outcomes which are to be avoided. Broad objectives include consideration of long term interests and the avoidance of irreversible or slowly reversible changes. These general objectives could be taken as the starting point for setting more specific objectives for particular biodiversity impact activity. To be precautionary, priority should be accorded to the avoidance of potential harmful activities and the overcapitalization of such activity.

Operational targets and limits should be specified based on the best scientific evidence available. Targets identify the planned outcome for a given biodiversity impact activity. These may, for example take the form of some limited biodiversity impact, or a specified level of impact relative to time zero or any other agreed baseline state. The operational constraints explicitly define the undesirable outcomes that are to be avoided. Both operational targets and constraints should be expressed in measurable terms such as target reference points and limit reference points.<sup>2</sup> The details of what can be measured will often vary with different species and biodiversity impact activities and national capacity; consequently the operational targets and constraints should be expressed in terms which take these issues into account. The specification of operational targets and constraints cannot be separated from the consideration of the types of data and methods to be used to assess biodiversity impacts.

Once these targets or limits are reached, predetermined and agreed contingency plans (mitigation measures) should be implemented. The procedure described above is similar to that involved in the implementation of environmental impact assessments which are, or are becoming, formally incorporated into the planning process in most countries. In the application of the precautionary approach described here it is necessary for the decision-making process to be explicitly incorporated into pre-determined management plans.

The Meeting derived this precautionary methodology from procedures established in other international fora. These include the practice of the 1980 Convention on the Conservation of Antarctic Marine Living Resources, the 1995 UN Agreement on High Migratory Fish Stocks and Straddling Fish Stocks as well as the proceedings of the Lysekil Workshop (FAO Fisheries Technical Paper 350/1, 1995) which sets guidelines for

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1 The Preamble to the Convention on Biological Diversity notes that "where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat".

2 See *e.g.* FAO Fisheries Report, No. 527, 1995

the application of the precautionary approach to capture fisheries and species introduction. Consequently it was agreed that a thorough evaluation of the precautionary approach, as developed in the relevant literature, legal instruments and operational practices, should be undertaken as a matter of priority in relation to the five thematic areas of the Jakarta Mandate.

The Meeting also draws the attention of Parties and the COP to the fact that implementation of the precautionary approach for biodiversity matters should be vested in national and regional organizations with environmental competence. For example, the undertaking of impact assessments on proposed activities requires insight into ecological principles as well as an appreciation of possible biodiversity effects. The authorization of subsequent activities would therefore be based on an environmentally competent assessment. In instances where capacity and environmental competence are absent or insufficient, the building of environmental competence should be afforded a high priority.

### **III. Implementation of Integrated Marine and Coastal Area Management (IMCAM)**

The Meeting agreed that IMCAM constitutes the most effective tool to implement the Convention with respect to the conservation and sustainable use of marine and coastal biodiversity. Such a tool requires implementation at different levels, ranging from intra-national (local), national, to regional (supra-national) and global.

The Meeting recognized that IMCAM would be implemented largely by individual Parties to the Convention, but that because of the linkages (ecological or otherwise) between marine areas, it should be coordinated by existing regional mechanisms, *e.g.* the Regional Seas Programmes and regional conventions. Furthermore, the effective implementation of IMCAM will therefore depend on international and global cooperation, particularly for straddling stocks and marine pollution from land-based activities which may spread over large geographic areas. Consequently the Meeting anticipated that the implementation of IMCAM would be linked to the actions of the UN Convention on the Law of the Sea (UNCLOS) and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA).

The Meeting agreed that there is a need at the national level to establish broad objectives and goals for IMCAM which should be approved by coastal zone policy makers in national, regional or municipal governmental bodies, supported by relevant scientific institutions. The Meeting emphasized the important linkages between IMCAM and the conservation and sustainable use of inland water ecosystems. Linking structures should therefore include departments or ministries responsible for economic development, water management and coastal defence, environmental and physical planning, as well as common interest groups that represent targets of IMCAM policy, such as fisher organizations, local communities and tourist operators.

It is important that IMCAM operate at both national and local levels, and that a community-based approach be adopted. Implementation of IMCAM may therefore require some institutional reorganization at both the national and regional level, where institutions carry out functions relevant, but not exclusive, to biodiversity issues.

#### **IV. Additional Issues**

##### **A. Defining a “healthy ecosystem”**

The Meeting recognized that the development of appropriate and functional definitions of “ecosystem health” is fundamental to assessing to what extent effects to biodiversity are “harmful”.

While agreeing that the development of definitions for ecosystem health and harmful effects requires priority attention, the Meeting offered the following interim working definitions:

“a healthy ecosystem is one whose parameters do not vary outside predetermined limits from a predetermined level within a given period of time”.

To take account of the possibility that a steady-state condition may arise following gross perturbation(s) and impairment of functions, this definition requires the following caveat:

“any lack of, or extreme, variation outside the pre-determined limits should be kept under constant review and contextual comparisons made with systems of similar structure and/or function to assist in interpretation of observed changes”.

A “harmful” effect would then be defined as one that violates the conditions for a healthy ecosystem.

In addressing the further development of the conditions, it is imperative that due consideration is given to the potential reversibility of harmful effects and to the minimization of the risk attached to the induction of irreversible effects. These latter principles are consistent with the Meeting’s understanding of the precautionary approach outlined above.

##### **B. Regional Implementation Capacity**

The Meeting recognized the importance of existing regional activities and associated conventions and protocols in implementing many of the objectives of all of the thematic issue-areas of the Jakarta Mandate. It also recognized the considerable advantage to the Convention of establishing programmatic linkages with such existing activities as the various UNEP Regional Seas Programmes, and the regional activities of the IOC of UNESCO. Based upon information available to the Meeting, a summary of potential programme linkages is given in Annex VII. The Meeting agreed that the Secretariat be requested to draw up a list of all relevant regional programmes and activities.

##### **C. Open Ocean Ecosystems**

The Meeting acknowledged the significant lacunae in knowledge about open water marine ecosystems. In particular there is much still to learn about the taxonomy of oceanic and deep sea bed species, there is need for an inventory of known species and their geography as well as further information on the links between marine biodiversity and ecological processes in the open ocean.

*Migratory and Straddling Species*

The open ocean impacts on some species which occur either permanently or transiently in coastal waters. This implies a linkage between the health and biodiversity of open ocean areas and coastal eco-systems. The vulnerability of this linkage to negative impacts varies temporally and spatially, as well as with the life history responses of the organisms concerned. Consequently, anthropogenic impacts on all demographic properties of the species concerned should be considered over all relevant scales. The Meeting recognized that many of these issues are addressed in principle by the 1995 Straddling Stocks Agreement and have been addressed by other treaty regimes at global and regional levels, such as the Convention on Migratory Species (CMS), the North-West Atlantic Fisheries Organization (NAFO), the International Whaling Commission (IWC) and the 1996 Inter American Convention for the Protection and Conservation of Sea Turtles. The 1995 Straddling Stocks Agreement in particular urges the establishment of regional fisheries organizations to conserve and manage stocks that occur both on the high seas and within national jurisdictional limits.

*Oceanic Protected Areas*

The Meeting also highlighted the unique significance of certain high seas and deep sea bed areas (such as identified spawning areas, deep ocean trenches and certain hydrothermal vents) outside the limits of national jurisdiction, and called for consideration to be given to the development of means and modalities for the establishment of marine protected areas in such locations. The Meeting suggested that the Secretariat include this issue in its collaborative relations with the UN Department of Ocean Affairs and Law of the Sea.

**D. Eco-labelling**

Initiatives exist or are being planned to eco-label fishery products, with the idea that market forces will motivate sustainable resource use. Such initiatives have been used in other sectors to promote conservation and sustainable use. These initiatives will need to be evaluated in the light of the objectives of the Convention. Appropriate means for undertaking this evaluation should be identified.

## ELEMENTS OF A THREE-YEAR WORKPLAN

Taking account of the above conclusions and recommendations, the proposed mechanism of work contained in document UNEP/CBD/JM/Expert/I/3 and the information contained in Annex VI, the Meeting developed an outline of activities to address the five thematic issue-areas identified by the Jakarta Mandate. The following work-plan is proposed. The Meeting emphasized that the work-plan is in skeleton form only, and that difference of detail between elements does not imply any inherent or priority weightings.

### EVALUATION OF THE PRECAUTIONARY APPROACH AS APPLIED TO THE CONSERVATION AND SUSTAINABLE USE OF MARINE AND COASTAL BIOLOGICAL DIVERSITY

1. As a core task, a thorough evaluation of the precautionary approach as developed in the relevant literature, legal instruments and operational practices should be undertaken in relation to the five thematic issue-areas of the Jakarta Mandate.

time: over the three-year period  
ways and means: Conference of the Parties

### INTEGRATED MARINE AND COASTAL AREA MANAGEMENT

2. Review of existing instruments relevant to IMCAM and their implication for the application of the Convention.

time: medium/high priority  
ways and means: Secretariat

3. Develop guidelines for ecosystem assessments paying special attention to the need to identify and select indicators, including social and abiotic indicators, separating natural from human-induced effects.

time: medium/high priority  
ways and means: linkages to other organizations and initiatives

### MARINE AND COASTAL LIVING RESOURCES

4. Address the need to develop ecosystem level approaches to the sustainable use of marine and coastal living resources, including the identification of key variables or interactions for the purpose of assessing and monitoring:

- (a) biodiversity
  - impacts on biodiversity
- (b) sustainable exploitation
  - over-capitalization
  - socio-economic needs

(c) ecosystem effects

- pollution, including remedial operations
- by-catch
- species balance
- introduction of alien species
- harmful fishing practices/techniques
- taking of ornamental/aquarium fish and corals
- abiotic effects
- changes in environmental variables which induce structural changes at the community level.

time: high priority

ways and means: workshop and ongoing facilitation by the Convention-process

## MARINE AND COASTAL PROTECTED AREAS

**5.** The Secretariat should work with relevant IGOs and Parties on operational considerations of marine and coastal protected areas, having in mind the 6 protected area categories as defined by IUCN, and especially taking into account considerations of:

- (a) economics
- (b) capacity building
- (c) legal and institutional issues
- (d) education and information
- (e) information exchange between sites aimed at networking MCPA
- (f) local and traditional use
- (g) linking of conservation and sustainable use, (*e.g.* UNESCO-MAB Biosphere Reserves)

time: high priority

ways and means: Secretariat in collaboration with Parties and relevant IGOs and NGOs, and regional and national training courses for capacity building

**6.** Conduct research on the effects of marine and coastal protected areas on population size and dynamics, within the protected areas and in surrounding areas.

time: ongoing

ways and means:

- (a) national activity and specific research projects, including international coordination and activities
- (b) desk study to gather and assimilate information

## MARICULTURE

**7.** Convene a meeting of experts to evaluate the application to mariculture of precautionary approaches to fisheries

time: within two years

ways and means: through partnership with technical expert groups (e.g. FAO, ICES, ICLARM)

- 8.** Developing sustainable mariculture, with attention to, inter alia,
- (a) application of the precautionary approach;
  - (b) developing value criteria to separate mariculture for economic benefits only and mariculture for biodiversity (e.g. species recovery) and formulating criteria to evaluate the effects of these respective forms of mariculture;
  - (c) development of sustainable mariculture practices, especially for shrimp culture;
  - (d) researching polyculture approaches in marine aquaculture;
  - (e) development of emergency techniques;
  - (f) identification of suitable species for mariculture which are in a lower trophic level;
  - (g) documenting local species and their culture performance (for the purpose of identifying local species as an alternative to alien introduction);
  - (h) assessments of the impacts of genetic mixing;
  - (i) assess the potential impacts of GMO release into the wild;
  - (j) identification of replacements for fish meal (farmer access to lower cost food);
  - (k) continuation of research on breeding technologies to enhance genetic aspects of biodiversity for captive and wild populations; and
  - (l) development of guidelines for the restoration and rehabilitation of mariculture sites.

time: high priority

ways and means:

- (a) cross-sectoral efforts by Parties to the Convention
- (b) establish linkages (*eg* through CHM and/or national Convention focal points) with FAO's regional information system

**9.** Develop linkages with CITES on the application of CITES Appendices to vulnerable and endangered commercial species.

time: low priority

ways and means: through the existing Memorandum of Co-operation with CITES

## ALIEN SPECIES

**10.** Consider the effects of alien species introduction, specifically in the context of the characteristics of the species and the characteristics of the recipient ecosystems.

time: planning in the first year - convene in second year

ways and means: workshop, with the participation of and/or building upon the experience and work of relevant organizations (*eg* ICES)

/...

**11.** (a) Examine the need for additional effective legal instruments related to the introduction of alien species; in particular provide input on biodiversity-related matters into IMO's discussion on its International Guidelines for Preventing the Introduction of Unwanted Aquatic Marine Organisms and Pathogens from Ship's Ballast Water and Sediment Discharges.

(b) Establish a process to deal with reckless or deliberate introductions (especially where transboundary effects have occurred)

time: (a) immediate; (b) longer-term

ways and means: (a) and (b) through the participation of the Executive Secretary in the IMO proceedings. In preparing for this participation the Executive Secretary may (i) use the outcome of the workshop on alien species for input into the IMO discussions and (ii) ask for or request input/views on biodiversity-related matters from experts on the roster, including contributions on the issue referred to in (b) above

**12.** Establish an Incident List on introductions through the national reporting process.

time: to be considered by the fourth meeting of the Conference of the Parties

ways and means: Secretariat to distill references to incidents from national reports

#### GENERAL ELEMENTS

**13.** The Secretariat should assemble a data-base of on-going case studies with potential co-operating bodies with respect to marine and coastal biodiversity, specifically in relation to integrated marine and coastal area management

time: ongoing activity

ways and means: initially: formulate questionnaires, requests for input, desk-study to gather and compile information and to review/analyze literature and reports.

**14.** Development of a database of experts, starting from the roster, to be available for the development and implementation of specific elements of national policies on marine and coastal biodiversity, giving full recognition to the importance to taxonomy and following closely the development of the Global Taxonomic Initiative. Special consideration to regional perspectives and the setting up of regional centres of taxonomic expertise, and taxonomic efforts of other intergovernmental programmes, agencies and relevant institutions.

time: ongoing

ways and means: Clearing-house mechanism

## Annex VI

## SUMMARY OF VIEWS AND PRIORITIES

This grid reflects the discussions of the Meeting and was used as a working document to structure and assemble information (see paragraph 17 of the report). It has been revised by the Secretariat to incorporate further amendments agreed by the Meeting (see paragraph 20 of the report). The Meeting recommended that the format of this grid could be used to incorporate further information as this becomes available.

Subject	Guiding principles/ Interpretations	General Considerations	Gaps in knowledge/ Research priorities	Existing or planned non- CBD activities relevant for the JM	Collaborative actions/Network (see also Annex VII)
Integrated Marine and Coastal Area Management	<p>- natural/ecological boundaries should be adopted; in some other cases administrative boundaries might be sufficient</p> <p>- define “healthy ecosystem” and “harmful effects”</p>	<p>IMCAM as the over-arching concept to address, amongst others marine and coastal protected areas, sustainable use of marine and coastal living resources, mariculture and alien species; this has legal and institutional implications</p>		<p>guidelines on integrated management by, e.g., World Bank, OECD, IUCN, World Coast Conference; references to integrated management in, <i>inter alia</i>, Agenda 21, FCCC, GPA, SIDS, ICRI, FAO Code of Conduct;</p>	
		<p>transboundary issues for IMCAM implementation might require regional co-operative actions</p>		<p>Regional Sea Programmes</p>	<p>need for Parties to co-ordinate national efforts</p>
		<p>the participation of the community in resource management and formulating defensible decision rules</p>			<p>UNESCO-CSI</p>
		<p>training is essential component for building IMCAM framework</p>		<p>IOC IMCAM training courses</p>	
		<p>best scientific knowledge to be considered for the formulation of IMCAM programmes</p>			
			<p>information (including social and economic research) is needed on uses of the coastal and marine resources and on the available legal mechanisms having authority over those activities</p>		

Subject	Guiding principles/ Interpretations	General Considerations	Gaps in knowledge/ Research priorities	Existing or planned non- CBD activities relevant for the JM	Collaborative actions/Network (see also Annex VII)
Integrated Marine and Coastal Area Management <i>(cont.)</i>			need for identifying and selecting proper indicators, including social indicators and other abiotic indicators in the context of ecosystem assessment	WRI-IUCN-UNEP Biodiversity Indicators report for Policy-makers; GESAMP work; outcome of workshop on biodiversity indicators (IUCN/BIONET/others CSD, New York, April 1997)	
		need for early warning monitoring systems for environmental changes which might affect negatively biodiversity		IOC/HOTO-GOOS	
Marine and Coastal Protected Areas			research on the effects of marine and coastal protected areas on population size and stock		
		develop self-funding mechanisms and involvement of and management by the private sector			IUCN-working group
		essential elements: capacity building, human resource training; education/information; community involvement explaining the rationale of MCPAs; taxonomy			MAB-Biosphere
		opportunities for MCPAs in a cross-boundary setting		Regional Seas protocols	
		opportunities for MCPAs in areas beyond national jurisdiction/ high seas (possible use of the LME concept for such purpose)			
		development of ecological networks and corridors			IUCN
	combining conservation and sustainable use perspectives, including user rights			IUCN/ categorization of MCPAs	

Subject	Guiding principles/ Interpretations	General Considerations	Gaps in knowledge/ Research priorities	Existing or planned non- CBD activities relevant for the JM	Collaborative actions/Network (see also Annex VII)
Conservation and Sustainable Use of Marine and Coastal Living Resources	the precautionary approach should be employed as a management tool as well as a scientific device (having information gathering capabilities/ improving certainty)			examples of practical application of the precautionary approach: - CCAMLR - to be implemented: FAO Code of Conduct on Responsible Fisheries; Agreement on Straddling and Highly Migratory Stocks	Regional Fisheries Organizations
		analysis of collected data as a tool to determine sustainability	limited knowledge base: reliable data (collection) data analysis ecosystem approaches ecosystem disturbances over-harvesting		
				Initiative within the private sector: Marine Stewardship Council	
					with regard to commercial fish species, explore the possibility of linkage with CITES
Mariculture		economic vulnerability should be an element of (environmental impact) assessments, including coastal market assessments (i.e. longer-term economic effect of mariculture/the temporal spread of the entire activity)			
		operationalize sustainable mariculture practices within the framework of IMCAM ( <i>inter alia</i> through capacity building./ training courses/ community involvement)			

Subject	Guiding principles/ Interpretations	General Considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the JM	Collaborative actions/Network (see also Annex VII)
Mariculture <i>(cont.)</i>		mariculture for economic benefits only and mariculture for ecological (biodiversity) benefits - need impacts be addressed differently?			
		addressing second-order effects in the context of food for mariculture	identifying replacements of fish meal (farmer access to lower cost food)		
				World Bank is producing guidelines on sustainable mariculture (including the issue of site selection)	
			development of sustainable techniques for mariculture		
			poly-culture/integrated farming system for inland species as potential for marine aquaculture		
			development of low impact emergency techniques (e.g. disease mitigation) which are sustainable		
			identify suitable species for mariculture which are in a lower trophic level		
			continuing research on breeding technologies to enhance genetic aspects (capture and wild populations)	ICLARM	
Alien species		systems under stress are more vulnerable to introductions			
		primary focus on prevention of introduction of alien species; eradication almost impossible; mitigation of effects only in emergency/extreme cases			

Alien species ( <i>cont.</i> )	art. 8(h) (CBD) should be understood as to include genetically differentiated populations and GMOs	deploy resources to monitor impacts and research to address the interactions between local and introduced populations and species	assess the impacts of genetic mixing, specifically paying attention to sub-populations (and GMOs)		
			research is needed on local species value/ document local species and their culture performance		
		legal instruments may have to have a stronger character			
		CBD should link through its CHM existing databases; - databases should also address the ecological effects and the socio-economic effects of introductions - need to harmonize and evaluate available data for the specific purpose of biodiversity		FAO database; discussion list on E-mail; ICES-IMO Working Group on the Transfer of Marine Organisms; ICES-IOC-IMO Study Group on Ballast Waters and Sediments; ICLARM Fish Base	OSPAR (under development: inventory of unintentionally introduced species within the region and considering the possibility of setting up database)
			quarantine conditions that may reduce invasive effects of alien species		
		develop process to deal with careless or deliberate introductions/ esp. transboundary effects			
		general lack of capacity needs to be addressed through education and public awareness		<i>inter alia</i> Environmental Education Programmes of UNESCO	

## ANNEX VII

### PROGRAMMATIC LINKAGES

#### **World Bank**

Since 1992, and the adoption of Chapter 17 of Agenda 21 by UNCED, some 25 projects with coastal and marine components have been developed in more than 22 countries, amounting to more than \$325 million. These include a number of planned projects such as the Indonesia Coral Reef Rehabilitation and Management Project (COREMAP), Thailand Coastal Resources Management Project, the Madagascar Second Environmental Project and the Mauritius Biodiversity Restoration Project. Components of all these projects reflect many of the concerns of the Jakarta Mandate's five thematic issue areas. The Bank has also published, either itself or in collaboration with a range of partners, a series of analytical papers and research reports which relate to issues identified in the Mandate.

Some of the World Bank's main activities in each of the five thematic issue areas are as follows:

#### *Integrated Marine and Coastal Area Management*

Integrated coastal zone or area management (ICZM) has been recognized as the most appropriate tool for achieving many of the objectives of Chapter 17 of Agenda 21. Its identification by the Jakarta Mandate has provided an important further recognition of its significance in responding to the environmental problems of marine and coastal areas in a manner consistent with environmentally sustainable development. Since 1993 the Bank has been involved in promoting the establishment of ICZ planning and management in its borrowing countries through awareness creation and capacity building, investment and partnerships with both governments and new partners including NGOs.

Analytical work in the field includes the dissemination of best practice through the recently published *Guidelines for Integrated Coastal Zone Management* (1996) and a regional report *Africa: A Framework for Integrated Coastal Zone Management* (1995) as well as a series of country studies resulting from workshops supported by the Bank and SIDA in the Seychelles and Tanzania. Since 1994 the World Bank has helped train more than 300 professionals (within and outside the Bank) on principles of ICZM and the tools required for the implementation of programmes for integrated management of coastal and marine resources, mostly in Africa (see workshop reports above).

These programmes provide support for capital investments in water supply and sanitation (Lebanon Solid Waste and Environmental Management Project), and marine pollution abatement through projects addressing issues such as improved port reception facilities for ship generated waste (in the Wider Caribbean) and the Seychelles Biodiversity Conservation and Marine Pollution Abatement Project.

#### *Protected Areas*

In collaborations with the Great Barrier Reef Marine Park Authority and the World Conservation Union (IUCN), and with the assistance of the IUCN Commission on National Parks and Protected Areas (CNPPA) and the World Conservation Monitoring Centre (WCMC), the World Bank has sponsored and produced in 1995 a four volume Report on a *Global Representative System of Marine Protected Areas*. The Report recommends priority areas and actions for the creation of a truly representative system and provides guidance to the GEF, the World Bank and other funding bodies for investment in marine biodiversity conservation of the world's marine protected areas. Protected area identification and management are components of a number of existing and planned Bank funded projects.

### *Sustainable Use of Marine and Coastal Living Resources*

Sustainable use is a component of many of the ICZM projects discussed above, as well as projects such as the Coral Reef Rehabilitation and Management Project (COREMAP) in Indonesia. In 1995 the World Bank supported a workshop on Sustainable Financing Mechanisms for Coral Reef Conservation, the proceedings of which were published. The World Bank is also undertaking analytical work on the valuation of natural resources, including marine and coastal resources, such as coral reef ecosystems (see *e.g. The Economic Value of Indonesian Coral Reefs*, Cesar, 1996). The World Bank is moving away from financing fisheries development towards an emphasis on fisheries management carried out through integrated projects, however it is currently considering a proposal for a Market Transformation Initiative in the Marine area, perhaps through IFC's Small and Medium Enterprises (SME) GEF programme, to support its borrowing countries' participation in the Marine Stewardship Council Initiative. The MSC, launched in 1996 and formally established in 1997, aims to use market forces to support sustainable fishing by certifying fisheries which meet the principles and criteria for sustainable fishing which are currently being developed.

### *Mariculture*

The Bank is involved in a number of mariculture projects, including the rehabilitation of disused ponds in an environmentally sustainable fashion (in the Thailand Coastal Resources Management Project) and is developing guidelines for sustainability of mariculture, which include issues of pollution control as well as escape into the wild of farmed specimens.

### *Alien Species*

In addition to inclusion of guidelines on escape of farmed specimens in its Mariculture guidelines the Bank has also started analytic work on control of genetically modified organisms (GMOs) through its work on biosafety (see Doyle and Persley (1996) *Enabling the Safe Use of Biotechnology: Principles and Practice*).

## **UNEP**

With regards to the need of the Secretariat to strengthen and develop special partnership arrangements with international organizations and institutions, including regional bodies with particular competence in specific areas of marine and coastal biodiversity, as urged by SBSTTA II, the representative of UNEP informed the Meeting that the Regional Seas Action Plans, Conventions and associated Protocols provide in many instances more concrete and specific guidance for implementing the strong and broader obligations of the Convention at national level within the framework of regional cooperation.

In particular, the detailed obligations contained in the Regional Seas Conventions, including the Barcelona, Cartagena and Nairobi Conventions and their SPAW Protocols, will, or potentially can, serve to provide concrete guidelines on these high priority issues of marine biodiversity for the implementation of the Convention at the regional level.

In the light of the above, UNEP recommended that programmatic linkages between the Convention and the UNEP Regional Seas Programme be developed through the development of co-operative programmes which would specifically link the work programme of the Convention with relevant components of the various Regional Seas Action Plans and Programmes and their associated Conventions and Protocols.

The co-operative programmes would provide the foundation to enable the two Secretariats to subsequently develop further programmatic linkages to achieve cooperation and harmonization between their programmes.

The co-operative programmes could include, inter alia:

- (a) Elaboration of the role of regional Convention Secretariats in the implementation of the Jakarta Mandate for the conservation and sustainable use of marine and coastal biological diversity;
- (b) Establishment or strengthening, as necessary, of a regional co-ordinating mechanism and procedures for the collection and dissemination of information that would optimize the use of limited financial and human resources. The availability and accessibility to, and appropriate use of information are particularly critical issues in the implementation of Conventions;
- (c) Development of co-ordinated and integrated information management systems and databases as the first phase of a broader effort at developing an integrated information system with other biodiversity-related Conventions;
- (d) Establishment of specialized networks of individuals and institutions, and the strengthening of linkages among them in support of more integrated policies and implementation measures at national levels;
- (e) Establishment of a regional co-ordination mechanism for undertaking assessment studies, other than national, both concerning the state of individual species and ecosystems; and
- (f) Identification of priority sectors/activities pursuant to the Convention and the development, as necessary, or updating of environmentally sound technologies (ESTs) and environmentally-sound management practices (ESMPs). These may serve as resources for national actions and lead to agreement on common measures at a regional level.

The meeting took note of UNEP's offer and agreed to recommend that the Secretariat, in addressing the provisions of recommendation II/10 of the SBSTTA, strengthen and develop special partnership arrangements with UNEP's Secretariat for the Regional Seas Programmes with the objective of establishing programmatic linkages between the CBD and the Regional Seas Action Plans and Programmes, and the associated Conventions and Protocols.

## **UNESCO**

### *Intergovernmental Oceanographic Commission (IOC)*

The assistance that IOC could make available to activities within the framework of the Convention on Biological Diversity, specifically in the field of coastal and marine biodiversity, would initially concern the following areas:

- \* Integrated Coastal Area Management: assistance in the development of guidelines for the operationalization of the ICAM concept for the implementation of the Jakarta Mandate. (This would be done *inter alia* through the association of IOC with the studies in the field of ICAM being carried out by the Centre for the Study of Marine Policy, U.S.A.)
- \* scientific issues/uncertainties: provision of the scientific and technical input that might be required, through the results of the activities carried out by relevant IOC Groups of Experts (e.g. on marine pollution aspects), including on capacity-building issues;
- \* indicators for assessment and monitoring: assistance in the development of indicators for assessment and monitoring purposes. In relation to monitoring, the activities within the relevant modules of the Global Ocean Observing System (GOOS) might complement those under the Convention (e.g. the activities within the GOOS Health of the Ocean module).

*Rationale:* The Intergovernmental Oceanographic Commission (IOC) is an intergovernmental body dealing with international scientific co-operation in the field of oceanography. Its activities are grouped in programmes (science, services and training programmes), the design and implementation of which are guided by competent intergovernmental panels and group of experts. The products of the different activities range from atlases (e.g. bathymetric charts) to technical manuals and guidelines on standardized research and monitoring methodologies (e.g. for studies on specific contaminants), databases for information and training purposes (e.g. reference marine and coastal checklists, and related bibliographies). Networking activities are also carried out, both in terms of human expertise and research institution resources (e.g. the RECOSCIX network) and issue-oriented research and monitoring networks (e.g. the Global Coral Reef Monitoring Network - GCRMN). Regional marine science and technology networking exercises related to the management of oceanographic systems, focusing mainly on ICAM, capacity-building and risks issues, are also being implemented (e.g. for Latin America and the Wider Caribbean, through an agreement between the IOC and the European Federation of Networks -FER, mainly financed by the European Union). Activities and programmes are based on regional needs and priorities identified by Member States through the IOC Regional Subsidiary Bodies.

#### *Coastal Regions and Small Islands Unit (CSI)*

Fully in line with the recommendations of the Convention, in 1996 UNESCO launched the “Coastal Regions and Small Islands” initiative. This involves a joint effort of five long running programmes in the environmental and social science sectors: Man and Biosphere Programme (MAB), International Oceanographic Commission (IOC), Management of Social Transformation Programme (MOST), International Hydrological Programme (IHP), and International Geological Correlation Programme (IGCP), as well as relevant programmes in the fields of culture, communication and education.

CSI is a platform for cross-sectoral and co-operative action to assist Member States towards environmentally-sound, socially-balanced and culturally-appropriate development in coastal regions and small islands. It supports, in particular, the importance and the necessity of a holistic approach to sustainable development and the protection of coastal areas, and to local communities’ involvement in the conservation and management of coastal resources.

Through a regional approach, the task of the CSI is to assist UNESCO’s Member States towards integrated coastal zone planning and management. Field projects are being undertaken in different regions: Jakarta Bay (Indonesia), Ulugan Bay (Philippines), Dakar (Senegal), Gulf of Finland (Finland), and Rio de la Plata (Uruguay). Since the CSI initiative is part of the Organization’s response to calls for cross-sectoral, integrated approaches to environmental problems and to biological diversity conservation in coastal regions and small islands, it is possible to link UNESCO/CSI activities and expertise within the framework of the Convention on Biological Diversity. In the field of integrated coastal zones management, CSI projects can be relevant tools for the evaluation of the “lessons learned” in ongoing cross-sectoral case studies.

#### *Man and Biosphere (MAB)*

Consistent with the Convention approach, the MAB Programme of UNESCO has been advocating an integrated approach to natural resources management and protection since the early 1960s. In this context MAB has focused on identifying and addressing the specific issues for the conservation and sustainable use of living coastal and marine resources, emphasizing the application of the UNESCO Biosphere Reserve concept in coastal and marine ecosystems and addressing related capacity building needs. During the past decade, experiences in the management of coastal and marine protected areas have been accumulated and important innovations have been made in management of biosphere reserves themselves.

In this respect, challenges such as the development of cluster and transboundary biosphere reserves are of much interest. The application of new communication technologies, such as MABnet, is greatly facilitating the implementation of MAB ideas. In respect of the Convention, it is also important to mention the regional networks of Biosphere Reserves that MAB is creating to facilitate the exchange of information and experiences.

## **EU**

Under the EU Habitat Directive it is for the Member States to designate special conservation areas to provide a coherent European ecological network called Natura 2000. The Habitat Directive applies automatically to marine habitats and marine species within territorial waters. Establishment of the Natura 2000 network in the European Community is not incompatible with the maintenance of sustainable fisheries or aquaculture in the designated areas. A detailed work programme and a precise timetable have been established to ensure the introduction of this network.

Besides marine protected areas, the EU operates several closed areas or boxes as an additional tool in fisheries management. The restrictions on fishing in these areas differ according to the objectives with the closure. Traditionally the areas are instituted mainly in order to give additional protection to juvenile fish and to spawning fish at or close to spawning grounds. Depending on the objectives, the restrictions define: (i) the geographical area of the closure; (ii) the time period (*ie* all or part of the year); and (iii) access by fishing vessels and fishing methods.

Although the purpose of a closure is the protection of targeted commercial species, the areas also provide protection to other marine resources. Closed areas can apply both in coastal areas and off-shore in the open sea.

### *EU contribution to Integrated Coastal Management*

The Commission has launched a programme designed to demonstrate the conditions needed for sustainable development to become a reality in all the diverse situations along Europe's coastline. The programme is controlled jointly by the departments of the Commission responsible for the environment, for regional policy and for fisheries. It thus represents an integrated approach in terms of responsibility and application. Its purpose is to learn from the practices of integrated management in areas where these practices are well developed, in order to achieve sustainable and responsible fisheries.

## **FAO**

Many of the objectives of the Convention on Biological Diversity are currently, and have been, central to the programme of the FAO Fisheries Department. For example, maximum and optimum sustainable yield of capture fisheries embody sustainable use of aquatic biological diversity and have been guiding concepts in fisheries management for decades; integrated area management has been recognized as the best way to utilize sustainably aquatic habitats in the face of development and human population growth. FAO Fisheries recognized long ago, and has promoted awareness of the fact, that conservation and protection of aquatic habitats is vital to ensure productive capture fisheries. In the face of over-capitalized industrialized fisheries and intensive aquaculture systems, often operated in developing countries by large international companies, FAO Fisheries is promoting awareness of the environmental and socio-economic concerns resulting from unregulated development.

In the sector on aquatic genetic resources, the Fisheries Department's activities started in earnest in 1992 with the convening of an Expert Consultation on Utilization and Conservation of Aquatic Genetic Resources. The consultation identified priorities and general principles for the sustainable use and conservation of genetic

resources in both natural and farmed aquatic species. In close association with regional fisheries bodies and other international organizations, governmental and non governmental organizations, plans of actions and guidelines on conservation of aquatic genetic resources were developed in 1995 through the FAO/Japan Kyoto Conference on the Sustainable Contribution of Fisheries to Food Security and the FAO Code of Conduct for Responsible Fisheries. In 1995, FAO with the Government of Sweden elaborated guidelines for the application of the precautionary approach to fishing management and the use of introduced species.

Awareness of key issues and principles concerning aquatic conservation has been promoted through numerous publications, such as FAO Fishery Technical Papers and FAO Species catalogues, and through data bases such as FAO FishStat PC and AquaStat PC and FishBase, which is jointly produced with the International Centre of Living Aquatic Resources Management (ICLARM). The Fisheries Department has formed a strong link with ICLARM in the area of genetic resources. Several workshops, international networks on genetic resources, and publications have resulted. A major meeting on policy development for aquatic genetic resources is being planned for 1998.

The decisions of the Conference of the Parties, such as the Jakarta Mandate and Decision III/11 on agrobiodiversity, are significant steps for the international community and their implementation will help ensure sustainable use and conservation of many aquatic resources. The Fisheries Department's programme is fully in line with such decisions, as exemplified in the FAO Code of Conduct for Responsible Fisheries, the United Nations Convention on the Law of the Sea, and the recently expanded Commission on Genetic Resources for Food and Agriculture. Although sustainable use is the key concept in FAO's mandate, in the fisheries sector this is only possible through conservation and protection of the aquatic habitat and an appreciation of the interests of all stakeholders.

#### **COSTAL MANAGEMENT CENTRE - RIKZ (THE NETHERLANDS)**

The mission of the Coastal Management Centre is to stimulate, organize, facilitate and combine bilateral efforts in the field of Integrated Coastal Zone management (ICZM) within multilateral international frames. The board of governors of the CZM Centre, comprising representatives of six ministries that have responsibilities and expertise in ICZM, co-ordinates the programmes and activities on coastal management. The ministries involved are: Ministry of Transport, Public Works and Water Management; Ministry of Housing, Physical Planning and Environment; Ministry of Agriculture, Nature Management and Fisheries; Ministry of Education and Science; Ministry of Economic Affairs; and the Ministry of Foreign Affairs, Directorate-General of International Cooperation.

The CZM Centre is active in sixteen regions and countries, including West and North Africa, Eastern Europe, South America, South Asia (SACC), South East Asia (CCOP) and the Black Sea countries (BLAP). The CZM Centre initiates and stimulates IMCAM projects by organizing the input of appropriate partners, facilitating finding funds and certifying the quality control of the projects. Training and the development of tools for IMCAM implementation are among the major activities of the Centre.

## **BALTIC SEA REGION**

The main relevant intergovernmental instrument in the Baltic Region is the Convention for the Protection of Baltic Sea Environment (Helsinki Convention, 1972), revised in 1992. The new edition of the Helsinki Convention stresses inter-alia the importance of the protection of biodiversity. The executive body of the Helsinki Convention is the Commission for the Protection of the Environment of the Baltic Sea (HELCOM). A specific division covering all aspects of biodiversity has been established within HELCOM's Environmental Committee: HELCOM EC NATURE.

**Alien Species:** Assessment of the distribution of alien species is contained in the Third Periodic Assessment of the Status of Environment of the Baltic Sea (1997), produced by the HELCOM on a basis of the Baltic Monitoring Programme. Studies on the distribution, ecological physiology and effects on local communities are conducted on both national and international (EC, Nordic Council) levels. A specific working group on alien species has been established by the Baltic Marine Biologists (BMB) - a scientific NGO working in Baltic region.

**MPAs:** A system of marine and coastal protected areas in the Baltic has been established by HELCOM. The selection of potential MPAs has been undertaken primarily by a joint BMB/WWF working group at the request of HELCOM. Few of the proposed MPAs, being relatively small, extend across national borders. Parties to the Helsinki Convention are now urged to establish the legal and institutional basis for the implementation of the MPAs. The protection value of the biodiversity (i.e. protection of sites of naturally high diversity, sites where seabirds moult and overwinter, fish spawning sites) was the basic criterion in the selection of the MPAs.

**IMCAM:** The IMCAM approach is included in national environmental protection policy in Latvia. Several IMCAM projects are currently under elaboration. Since the great importance of inland processes are a feature of the region, IMCAM has been tied strongly to Integrated Watershed Management (IWM) around the Baltic.

## **THE NORTH SEA REGION**

The North Sea Ministerial Conference in Bergen, Norway in March 1997 (involving both environment and fisheries ministers) is an excellent initiative towards formulating regional consensus and co-operative actions on the management of marine and coastal resources with a biodiversity perspective in one area.

### *The Wadden Sea Area*

The Wadden Sea Area is a good example of multilateral cooperation (between Germany, Denmark and the Netherlands) on marine and coastal area management. Cooperation is based upon the Joint Declaration on the Protection of the Wadden Sea (1982), which contains a statement of intent to coordinate national activities and measures resulting from international legal instruments aimed at nature protection, in particular the Ramsar, Bonn and Bern Conventions, the EC Bird Directive and other relevant EC Directives. In 1991, at the Esjberg Conference, guiding principles for trilateral cooperation, common management principles and common objectives for human use were developed. At the 7<sup>th</sup> Wadden Sea Trilateral Conference in 1994, the first results of a trilateral management plan, including eco-targets, were discussed. Further progress will be examined at the 8<sup>th</sup> Trilateral Conference in 1997.

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